Visualizing the French Enlightenment Network Using Palladio

By Melanie Conroy, University of Memphis

There are numerous digital tools for studying networks that can be of use to humanists. One such tool is Palladio, a digital humanities package developed in the Humanities + Design Lab at Stanford University.[1] Palladio lends itself to qualitative studies because the visualizations that it produces (maps, network diagrams, and tables) are familiar to most humanists, and because it allows for the filtering of data through categories chosen by the user. Digital tools offer an opportunity to pursue such research with lower technical barriers to intervention—including easier communication, tools for sharing data, and collaborating on writing. Visualization tools like Palladio allow academics to produce their own diagrams without necessarily hiring a designer.

I will walk through some examples of diagrams produced in Palladio. I will show how maps can be used to compare the weight, or influence, of cities, as well as travel and communication between cities and other geographical points; then I will show how network graphs can be used in the study of networked people or things. The data are from the Electronic Enlightenment project and the Groupe d'Alembert. I enriched the metadata with Maria Teodora Comsa, Chloe

[1] Palladio allows for the presentation of multifaceted data, such as network data with date ranges or categories such as network type with location data. Palladio was developed in the Humanities + Design Lab, by Dan Edelstein, Nicole Coleman, Ethan Jewett, Giorgio Caviglia, et al. For more information or try it out, see http://hdlab.stanford.edu/palladio/.

Edmondson, Dan Edelstein, and Claude Willan, according to the methods that we described in our article "The French Enlightenment Network."[2] This article explains how the dataset is structured and why it is structured that way.

I have made the French Enlightenment network dataset available online in multiple formats, with examples of diagrams, at http://bit.ly/VisualizingFEN. While I cannot fully explain how the dataset is structured or how it was created here, it is worth knowing that the data is a list of individuals with basic demographic data (name, birth and death places and years, nationality, gender, etc.); it also places these individuals into other groups, or networks, such as "Letters_Philosophical" for writers on philosophical subjects, and "Arisrocracy" for members of the nobility.[3] If you are interested in the structure of the data, I encourage you to open the Excel Document the Tab-Separated Values file and take a look at the raw data.

For the sake of this demo, I recommend opening the JSON document—that is, the preformatted version—in Palladio by following these steps:

1) Download the JSON document:

2) Open Palladio in your browser: http://hdlab.stanford.edu/palladio/.

3) Choose "Load an existing project" and then choose the file "French Enlightenment Network.JSON"

---

[2] See Maria Teodora Comsa, Melanie Conroy, Chloe Edmondson, Dan Edelstein, and Claude Willan, "The French Enlightenment Network," *The Journal of Modern History*, 88:3 (2016), 495-534.

[3] The dataset for "The French Enlightenment Network" is available online permanently here: https://searchworks.stanford.edu/view/bc436tm1194.

4) Select the tab that you would like to see. Choose “map” to view the map of linked birth and death places for the French Enlightenment network. Choose “graph” to see network diagrams.

First we will look at the “map” feature in Palladio.

Two Kinds of Maps: Points Versus Point-to-Point

There are two map types: 1) maps with points sized according to defined quantities, which are useful for displaying static geographic information, and 2) point-to-point diagrams, which are more useful for showing movement or change over time. The point-to-point maps are particularly useful for humanities research because they show network connections in a way that is intuitive to humanists by overlaying them on a map. The data for both of these map types can be filtered to show only a subset of the data.

The first type of diagram (Figure 1) consists of points on a map. Producing diagrams of this kind requires LatLong coordinates for all locations. Such maps can easily display quantities associated with a particular place—for example, quantities of people, events, or items. These maps are recommended for population data, data on the production of books, or number of events. The nodes can be sized by the number of records at each LatLong.

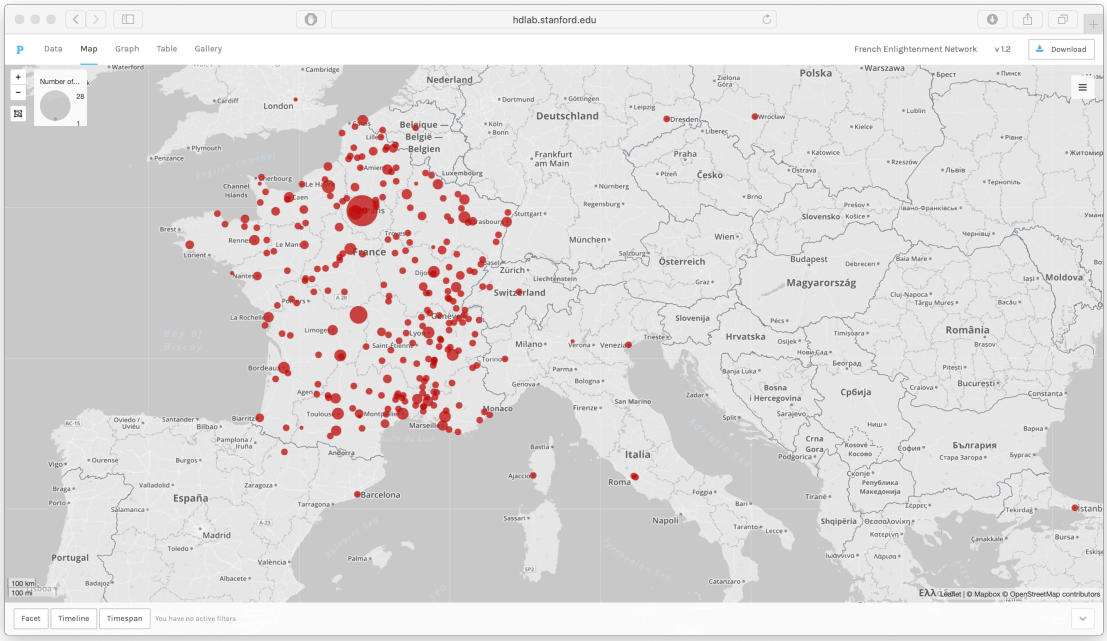

Figure 1: Birth Places of Members of the French Enlightenment Network

The second kind of diagram is a point-to-point diagram (see Figure 2).

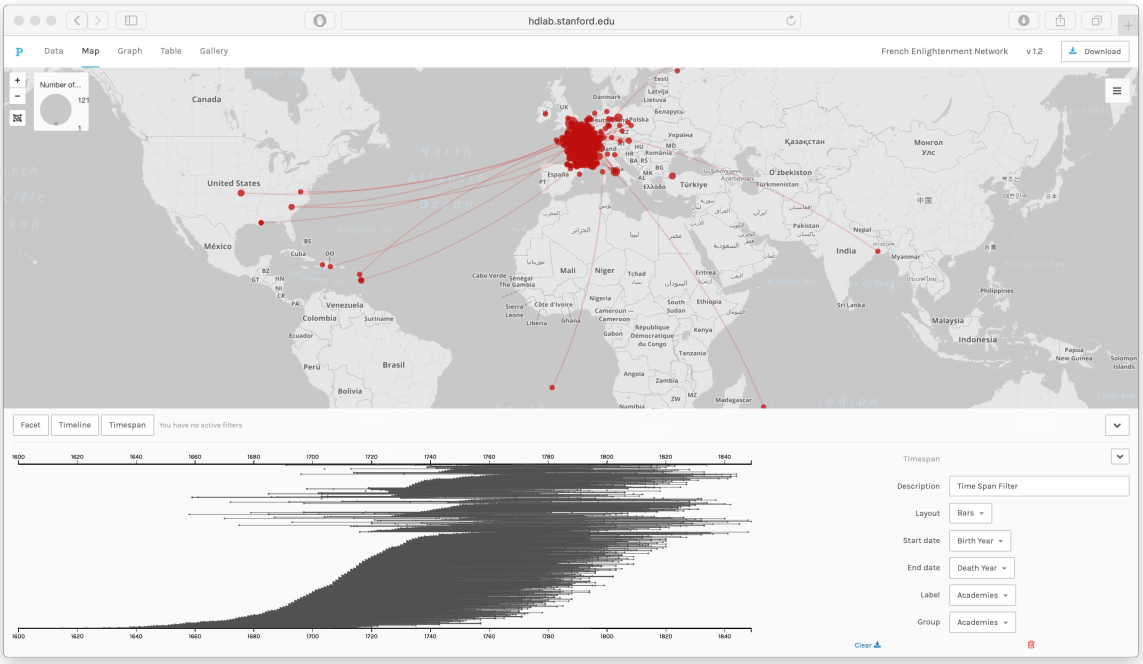

Figure 2: Linked Birth and Death Places of Members of the French Enlightenment Network with Timespan

Point-to-point maps are ideal for displaying trajectories, such as travel, or communication between population centers, such as the sending of letters. This map type requires LatLong coordinates for two distinct locations. The edges—the connections between points—could represent any number of other network relationships between two locations. The points are sized according to the total count of the items associated with that location.

In Figure 3, the linked birth and death places are displayed on a map alongside a timespan of lifespans. The timespan can be opened or closed with the arrows on the right side. It can also be deleted by clicking on the red garbage can.

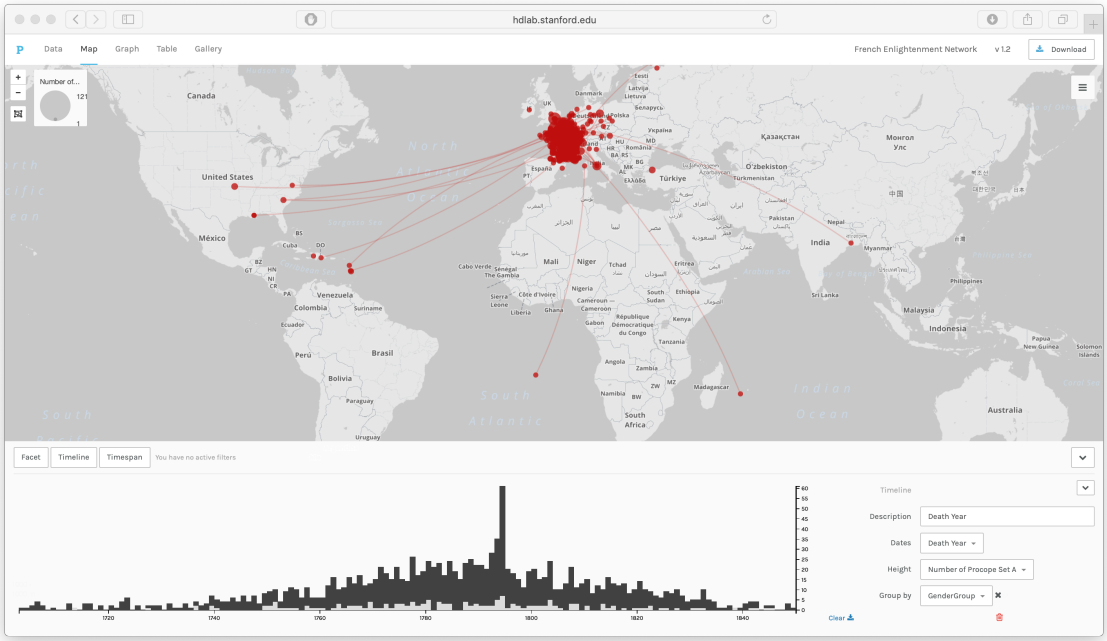

Figure 3: Linked Birth and Death Places of Members of the French Enlightenment Network with Timeline by Gender

Filtering

While maps are not new tools for humanists, digital technology allows for more sophisticated and rapid comparisons between subsets of data. Palladio makes filtering data easy and quick; in fact, producing a different map takes only a few seconds. In this case, the individuals have been coded by gender, nationality, social networks (Elite, Aristocracy, Military, Court), professional networks (Artisan, Finance-banking, Cultural, etc.), and by knowledge networks (Letters, Sciences, etc). These individuals also have birth years, death years, birthplaces, and death places associated with them, where this data is known. Filtering allows us to look at a series of maps and compare them easily. Figure 4 shows the linked birth and death places of aristocrats in the French Enlightenment Network.

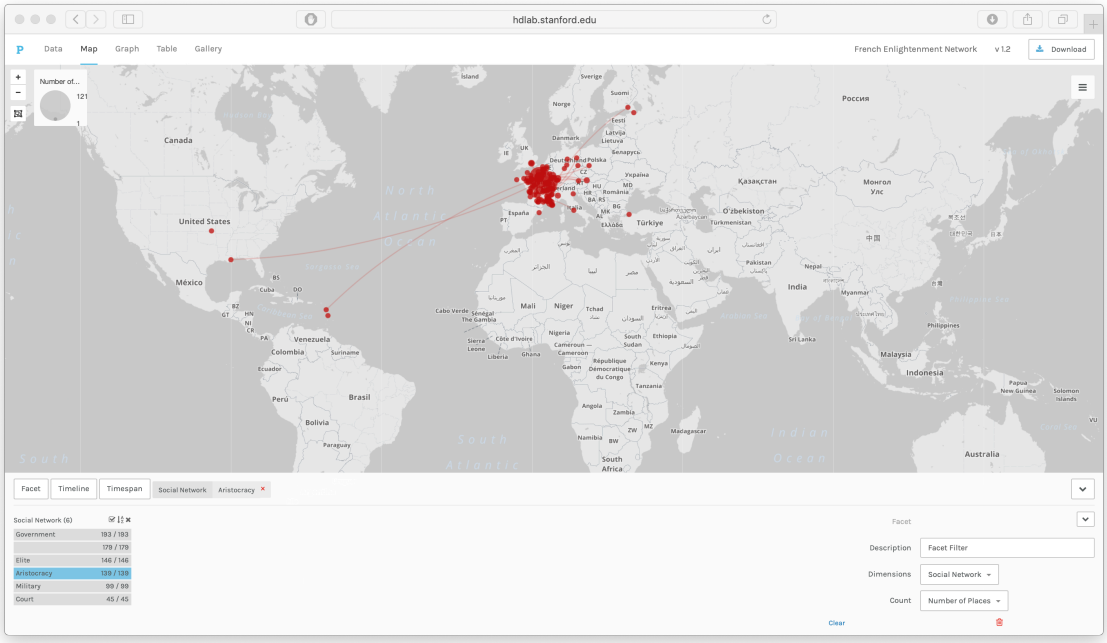

Figure 4: Linked Birth and Death Places of Members of the French Enlightenment Network Filtered (Aristocracy)

Second we will look briefly at the "graph" feature in Palladio.

Network Graphs

A network can link people, places, books, or any other entities that are connected to one another. People or groups are commonly nodes in graphs of social networks. Network graphs are useful for seeing connections between people or groups. They are also helpful for understanding how groups are structured. A network graph is a set of points (called nodes), connected by links (called edges).[4] There are other software packages—notably Gephi, a network analysis computer program designed for the quantitative study of networks. Palladio is particularly good for humanities research but lacks the ability to do complex mathematical analysis.

For this demo, please choose "Graph." Figure 5 shows the academy affiliations of members of the French Enlightenment Network with the knowledge networks of academy members. Each edge shows a knowledge network that is present in an academy. The nodes are sized according to the number of members of the academy or knowledge network. The edges represent knowledge networks that share members with academy members.

[4] For an introduction to social network analysis, see Christina Prell, *Social Network Analysis: History, Theory, and Methodology*, Sage Publications, 2011.

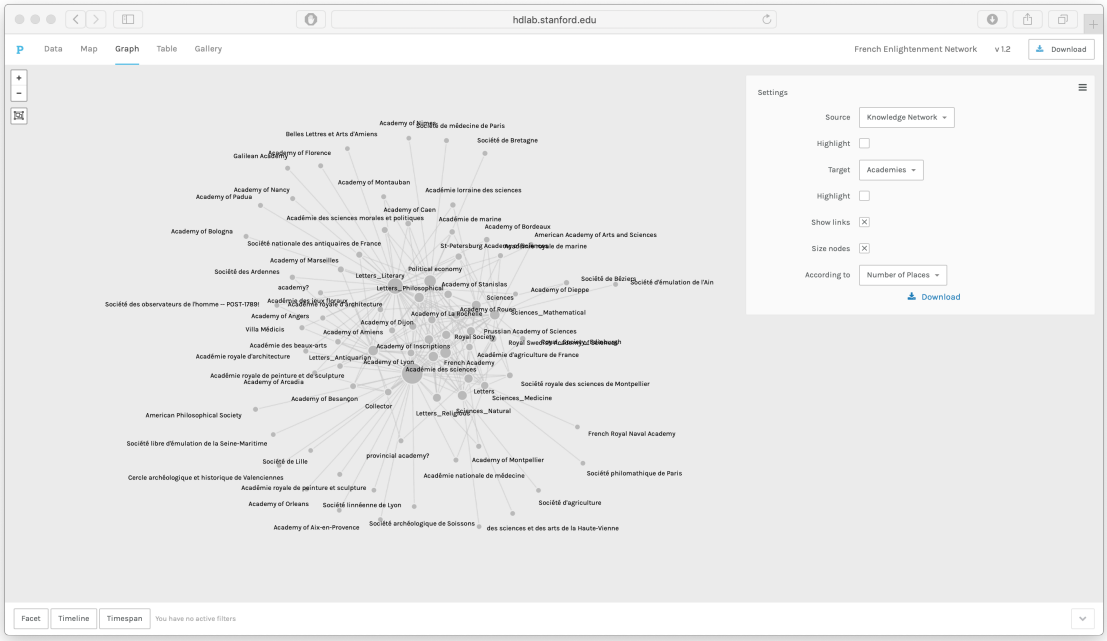

Figure 5: Network of Academy Affiliations and Knowledge Networks

Conclusions

Palladio allows for easy filtering and the construction of maps and network graphs. The French Enlightenment Network dataset contains many variables, such as knowledge networks, social networks, professional networks, academy membership, gender, birth and death places and years. A very large number of diagrams can be generated from this dataset and other tables can be added to any column in the table. One limitation of the dataset is that it only includes birth and death places (for some of the individuals); it doesn't contain other geographical information. By extending the table in the "data" section of Palladio, further geographic information or other characteristics can be added. When constructing datasets for Palladio, it is important to remember that multiple values can be used in a single cell of a spreadsheet but that one character

should function as the delimiter (for example, the comma or the semi-colon). For the sake of easily processing the data, it's easier if the same character is used throughout. By adding multiple values in the same cell, datasets can be made more compact.

There are two other major features of Palladio. Palladio can be used to produce tables and galleries. Select the "Table" tab to make lists of items based on a category they are in. For example, you can easily locate all of the French members of the Royal Society or all of the members of the "Letters_Literary" network by producing a table of academies or of knowledge networks. The "Gallery" feature is useful for producing a list of entities who fall into specific categories where there is an image associated with each. The French Enlightenment Network dataset includes Wikipedia Image URLs for portraits of some of the network, which can be used to explore this function.

Melanie Conroy is assistant professor of French at the University of Memphis. She received her doctorate from Stanford University in 2012. Her research explores the intersection of literature, visual studies, and social networks in modern French culture. She is the co-director of the Salons Project, a part of Mapping the Republic of Letters.